USACE Dredging Safety Update

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Dredging and Marine Accident update

- 7 Serious accidents on Contractor and USACE marine operations in past year out of 12 total for all operations.
- 3 fatalities, 2 disabling injuries, 2 major property damage

Fatalities

- Cook on vessel “went missing” during mid-afternoon. Was apparently taking out the garbage. Body recovered down-river without PFD (not req’d, as he was inside railing)
- Employee was missed at report for work on dredge. Gangway was missing and van present. Body recovered under gangway.
- Dredge tender employee lost when vessel overturned during anchor handling. Investigation pending.

Serious Injuries

- Dredge worker lost right index finger while attempting to reposition stored pipe. Pipe moved due to tender pushing it.
- Dredge employee lost left leg below knee when caught in bight of line and pulled into block. Was part of team trying to lower pipeline connection.

Property Damage

- Engine room fire in tug, caused by ignition of fuel mist and explosion of crankcase.
- Loss of boom on 119-ton floating crane due to boom drum friction system failure.

Marine Safety Sub-Community of Practice

- Serves as the technical working group for USACE and Contractor dredging and marine activities evaluations and regulations.
- Develops standards, such as life safety equipment for vessels, design safety standards for vessels, safe operating procedures in the marine environment.
- Performs technical interpretations on operator licensing, vessel configuration and use, and safety inspection of marine operations.

Marine Safety Sub-Community of Practice

- Group consists of HQ and field technical experts performing work in PDTs virtually and, as needed, in working groups, such as the recent meeting held at the Marine Design Center to establish USACE policy on vessel railing standards. Will include industry reps as appropriate.
- Performs waiver and interpretation reviews in accordance with EM 385-1-1 using a broad base of knowledge, combining regulatory expertise with field operating experience.

Process for Waivers and Interpretations

- "New" EM 385-1-1 Appendix M (Interpretations) and Appendix N (Waivers) outline the specific procedures
- Requests must be in writing and be detailed
- Submit at local level for processing at lowest level (project-district-division-HQ)

Process for Waivers and Interpretations

- Common Problems :
  - Justification given is “didn’t budget for compliance”
  - No “equal safety” measures taken when asking for waiver
  - Jump to HQ interp request when local people can give the same answer
  - Assumption that USACE will allow OSHA variances.

Deck Rail Regulation Draft

- History
  - questions about railing sufficiency arose in USACE fatality investigation.
  - HQ investigation found little consistency in design among USACE and contractor vessels
  - Primarily, fall protection railings (over 6 foot fall) were good – main deck railings were either absent, inconsistent, or sometimes good.

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- Process:
  - HQUSACE Safety and Ops agreed to develop standard guidance for both USACE and contractor vessels.
  - Initial survey done among USACE and selected industry/ contractor groups for opinions, solutions, etc.
  - Project Delivery Team (PDT) formed from Marine Design Center, Field personnel, and HQ Ops and Safety.

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- Development:
  - PDT looked at operational needs as well as ability to provide safe railings
  - Combined specifications from OSHA and USCG to devise railing system standards
  - Included exclusion statements when railings will not be practical or will pose unsafe condition.

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- **19.G MARINE FALL PROTECTION SYSTEMS**

- 19.G.01 Fall Protection Systems are intended to provide protection against falling from heights greater than 6 feet onto a hard surface. Fall Protection Systems shall be provided on all decks or work surfaces 6 feet or more above the main deck that is 6 feet or more above adjacent vessel decks, docks, or other hard surfaces.

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- 19.G.02 Railings & Bulwarks - Railing & bulwark systems shall consist of one of the following:
  - a. Three tier marine standard railing
  - b. Two tier guardrail in accordance with section 21.B.01
  - c. Solid bulwarks or coamings providing equal fall protection to a height of 39 inches
  - d. Railing systems may be constructed from chain, wire rope, pipe or structural sections

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- 19.G.03 Toe Boards - Deck edge toe boards not less than 4 inches high shall be provided around the perimeter of all upper decks that use railing systems
- 19.G.04 Personal Fall Protection Systems - Personal fall protection systems shall meet the requirements of Section 21.C.

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- **19.H MAIN DECK PERIMETER PROTECTION**
- 19.H.01 Main deck perimeter protection systems are intended to provide protection against falling overboard. Main deck perimeter protection systems consist of deck edge guardrails, bulwarks, flexible or swing away rails, and grab rails. Main deck perimeter protection is required on all manned vessels.

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- a. Manned vessels are vessels that operate with crews, or quartered personnel, or that have work areas that are occupied by assigned personnel during normal work activities.
- b. Deck perimeter rails are not practical for areas with overall deck width less than 2 feet
- c. Deck perimeter protection may not be practical in specific work areas of the deck intended for line handling or load handling operations

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- 19.H.02 Rigid or Tensioned Guard Rails and Bulwarks - Guardrails shall consist of three tier marine standard railing.
- 19.H.03 Non-Tensioned Guard Rails and Flexible or Swing Away Rails - Non-Tensioned Guard Rails or Flexible or swing away rails may be used in place of Rigid or Tensioned Guard Rails and Bulwarks on vessels or vessel areas where:
  - vessel operations would damage Rigid or Tensioned Guard Rails and Bulwarks; or
  - where vessel operations require easily removable railings.

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- 19.H.04 Grab Rails - Grab rails shall be provided on all main deck house sides of manned vessels with removable rails or with flexible rail systems.
- **19.H.05 Main Deck Areas Where Perimeter Protection May Be Temporarily Removed or Omitted.**

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- a. Manned vessels normally have specific dedicated deck areas directly involved with either line handling or load handling over and across the deck edges.
- b. In areas generally used as accessways or for work onboard, sections or runs of railings may be temporarily removed when they would obstruct short-term line handling, such as making up to a dock or another vessel
- c. In dedicated deck-edge work areas – intended primarily for deck-edge work and not for access or other work,

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- d. The following areas of manned vessels are examples of dedicated deck-edge work areas:

- towboat forward decks,
- tugboat after decks,
- floating crane hook areas,

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- 19.H.06 Unmanned Vessels
  - a. Unmanned vessels are vessels that carry cargo such as materials, supplies, equipment, or liquids, and do not have personnel on board during normal operations.
  - b. Main Deck Perimeter protection is not required for unmanned vessels.

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- 19.H.07 Operational Procedures in Areas Where Perimeter Protection is Not Present
- **19.H.08 Fleeting and Mooring Activities**
  - a. Fleeting and mooring activities are crew work related to tying both manned and unmanned vessels either to each other or to moorings.
  - c. For these operations, safety shall be ensured by applying the operational procedures described in section 19.H.07.

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- 19.H.09 Perimeter Protection for Small Boats, 20 Feet LOA or less.
- Proposed implementation gives 3 year grandfather period for existing rails, 18 months for no rails

Deck Rail Regulation Draft Review

- Now is your chance…
  - Draft text will be available for review through NDM website
  - Draft will be sent by email to all USACE operations and to requesting contractors.
  - Send comments to Karl Anderson, cutoff date will be mid-end of July

Questions?